6. CONCLUSIONS

The following conclusions with respect to site characterization were derived:

1) DNAPL has been distributed over approximately 6500 ft^2 of subsurface bedrock, a much larger area than previously reported. The DNAPL appears to be derived from multiple sources.

2) PAH constituents are present in the aqueous phase and should be available for microbial and hybrid poplar tree uptake. Total PAHs ($\sum$ 6 PAHs) in the soil and ground water ranged from below detection limits (BDL) to 8,276 mg/kg and BDL to 1.58 mg/L, respectively. It is unclear if the aqueous phase PAH concentrations will be toxic to trees or microorganisms.

3) DNAPL is located primarily at elevations just above the subsurface bedrock. It is unclear if the hybrid poplar tree root structure will extend to these depths and survive in areas of elevated PAH concentrations.

4) Cosolvency, solubility enhancement due to the presence of more soluble PAHs in the aqueous phase, appeared to be responsible for the magnitude of hydrophobic PAHs present in the aqueous phase.

The following conclusions about the grass phytoremediation study were derived:

1) Over one growing season and in the entire study area, acenaphthene, fluorene, phenanthrene, fluoranthene, and pyrene concentrations were reduced by 72, 50, 73, 55, and 49 percent, respectively. Chrysene was recalcitrant over the study period. PAH concentration reductions in the control, fescue, and rye plots did not differ significantly.

2) PAH concentration reductions over the study period were directly related to the aqueous solubility of the 6 PAHs. As PAH aqueous solubility increased, percent reductions generally increased.